

Fast Cyclic Redundancy Checking (CRC) Generation

ABSTRACT OF THE DISCLOSURE

5 A CRC generation unit includes a number of CRC calculation assemblies to
be selectively employed to incrementally calculate a CRC value for a first sequence
of N data bytes. The calculation is iteratively performed, one iteration at a time.
Further, the selection of the CRC calculation assemblies is made in accordance with
the group size of each of a number of data word groups of the N data bytes. In one
10 embodiment, the CRC calculation assemblies include a first assembly for
incrementally calculate the CRC value for an iteration, whenever the group size is
 $n/2$ bytes or less for the iteration, and a second assembly for incrementally calculate
the CRC value for an iteration, whenever the group size is more than $n/2$ bytes for
the iteration. In one embodiment, the CRC generation unit is a shared resource to
15 multiple network traffic flow processing units of a network traffic routing IC.